

(19)



Europäisches Patentamt

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(11)

EP 0 686 176 B1

(12)

EUROPÄISCHE PATENTSCHRIFT

(45) Veröffentlichungstag und Bekanntmachung des Hinweises auf die Patenterteilung:
21.01.1998 Patentblatt 1998/04

(51) Int Cl.⁶: **C09D 167/00, C09D 5/03**

(86) Internationale Anmeldenummer:
PCT/EP94/00386

(21) Anmeldenummer: **94907540.2**

(87) Internationale Veröffentlichungsnummer:
WO 94/19417 (01.09.1994 Gazette 1994/20)

(22) Anmeldetag: **11.02.1994**

(54) **PULVERLACKE AUF BASIS CARBOXYLGRUPPEN ENTHALTENDER POLYESTER UND GEEIGNETER VERNETZUNGSMITTEL SOWIE VERFAHREN ZUR BESCHICHTUNG VON METALLBLECHEN**

COATING POWDERS BASED ON CARBOXYL-GROUP-CONTAINING POLYESTERS AND SUITABLE CROSS-LINKING AGENTS, AND A METHOD OF COATING SHEET METAL WITH SUCH COATING POWDERS

VERNIS EN POUDRE A BASE DE POLYESTERS RENFERMANT DES GROUPES CARBOXYLE ET D'AGENTS DE RETICULATION APPROPRIES, ET PROCEDE POUR L'ENDUCTION DE TOLES METALLIQUES

(84) Benannte Vertragsstaaten:
AT BE CH DE DK ES FR GB IT LI NL SE

(30) Priorität: **27.02.1993 DE 4306102**

(43) Veröffentlichungstag der Anmeldung:
13.12.1995 Patentblatt 1995/50

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(56) Entgegenhaltungen:
EP-A- 0 010 805 EP-A- 0 322 834
US-A- 4 618 632

EP 0 686 176 B1

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Claims

1. Powder coatings based on carboxyl-containing polyesters and appropriate crosslinking agents, characterized in that the powder coatings comprise as film-forming material a mixture of

A) from 70 to 96% by weight, preferably from 80 to 93% by weight, of a mixture of one polyester or of two or more polyesters (A1) having an acid number in the range from 10 to 150 mg of KOH/g, preferably in the range from 30 to 100 mg of KOH/g, and of a crosslinking component (A2) which consists of compounds having on average more than one epoxide group per molecule and/or of β -hydroxyalkylamides, the ratio of the acid groups of the polyester (A1) or of the polyesters (A1) to the epoxide groups and/or the β -hydroxyalkylamide groups of the crosslinking component being from 0.6:1 to 1.6:1, preferably from 0.9:1 to 1.1:1, and

B) from 30 to 4% by weight, preferably from 20 to 7% by weight, of one acrylicized polyurethane resin or two or more acrylicized polyurethane resins having a content of ethylenically unsaturated double bonds (calculated as C=C, molecular weight = 24) of from 2 to 10% by weight, preferably from 4 to 6% by weight,

the sum of the proportions by weight of A) and B) being 100% by weight.

2. Powder coatings according to Claim 1, characterized in that triglycidyl isocyanurate is used as crosslinking component A2).

3. Powder coatings according to Claim 1 or 2, characterized in that the acrylicized polyurethane used as component B) has a glass transition temperature (tg) of more than 30°C and is obtainable by reacting polyisocyanates, methacrylates or acrylates having one hydroxyl group and alcohols having at least 2 hydroxyl groups per molecule.

4. Powder coatings according to Claim 1 to 3, characterized in that the mixture of A) and B) contains from 3.5 g to 10 g of ethylenically unsaturated double bonds (calculated as C=C, molecular weight = 24) per 1000 g of mixture.

5. Powder coatings according to Claim 1 to 4, characterized in that in addition to the film-forming components A) and B) they comprise free-radical initiators and/or photoinitiators and also, if desired, pigments and customary auxiliaries and additives.

6. Process for producing coated metal sheets, characterized in that the powder coatings according to Claim 1 to 5 are used for coating and are cured thermally or in addition by means of high-energy radiation.

7. Process according to Claim 6, characterized in that the metal sheets are deformed following the application and curing of the powder coating.

Revendications

1. Enduits en poudre à base de polyesters contenant des groupes carboxyle et d'agents de réticulation appropriés, caractérisés en ce que les enduits en poudre contiennent, en tant que matériau filmogène, un mélange de

A) 70 à 96% en poids, de préférence 80 à 93% en poids, d'un mélange d'un polyester ou de plusieurs polyesters (A1) ayant un indice d'acide dans la gamme de 10 à 150 mg KOH/g, de préférence dans la gamme de 30 à 100 mg KOH/g, et d'un composant agent de réticulation (A2), qui comprend des composés ayant en moyenne plus d'un groupe époxyde par molécule et/ou des β -hydroxyalkylamides, le rapport entre les groupes acides du polyester ou des polyesters et les groupes époxyde et/ou les groupes β -hydroxyalkylamide du composant agent de réticulation étant de 0,6:1 à 1,6:1, de préférence de 0,9:1 à 1,1:1, et

B) 30 à 4% en poids, de préférence 20 à 7% en poids, d'une résine de polyuréthane acrylée ou de plusieurs résines de polyuréthane acrylées ayant une teneur en doubles liaisons éthyléniquement insaturées (calculée en tant que C=C, poids moléculaire = 24) de 2 à 10% en poids, de préférence de 4 à 6% en poids,

la somme des proportions pondérales de A) et B) étant de 100%.

2. Enduits en poudre selon la revendication 1, caractérisés en ce que l'on utilise l'isocyanurate de triglycidyle en tant que composant agent de réticulation A2).